

In the Claims

CLAIMS

Claims 1-21 (Canceled).

22. (Currently amended) An integrated circuit package separator for separating a plurality of integrated circuit packages from one another, the integrated circuit packages being provided as integrated circuit chip components joined to a board, the separating including cutting the board, the separator comprising:

a panel;

a plurality of blocks over the panel, the plurality of blocks having curved upper surfaces and configured to form a recessed portion over an uppermost surface of the panel, the plurality of blocks being configured to support the board while leaving the integrated circuit chip components in the recessed portion extending between the block upper surfaces and the uppermost surface of the panel, the recessed portion terminating at the uppermost surface of the panel;

a cutting mechanism configured to cut the board while the board is supported on the plurality of blocks and to thereby separate the integrated circuit packages from one another; and

wherein the panel is immobile relative the plurality of the blocks.

23. (Withdrawn) The separator of claim 22 wherein the panel is fastened to the support.

24. (Withdrawn) The separator of claim 22 wherein components have a thickness and the blocks have a thickness about equal to that of the components.

25. (Withdrawn) The separator of claim 22 wherein at least some of the components have a common thickness and the blocks have a thickness about equal to said common thickness.

26. (Withdrawn) The separator of claim 22 wherein the blocks are in a one-to-one correspondence with the integrated circuit packages on the board.

27. (Withdrawn) The separator of claim 22 comprising more than one panel over the support, each panel having blocks associated therewith.

28. (Withdrawn) The separator of claim 27 wherein the each of the panels and blocks associated therewith is a panel and block assembly, the panel and block assemblies all being identical to one another.

29. (Withdrawn) The separator of claim 22 wherein the blocks are fastened to the panel.

30. (Withdrawn) The separator of claim 22 wherein the blocks are one-piece with the panel.

31. (Previously Presented) The separator of claim 22 further comprising pins extending upwardly from beneath the panel to beyond an upper surface of the panel, the pins configured to extend into the board and retain the board over the panel.

32. (Previously Presented) The separator of claim 31 wherein the pins do not extend through the panel.

33. (Previously Presented) The separator of claim 31 further comprising an actuator beneath the panel and configured to vertically displace the panel.

34. (Previously Presented) The separator of claim 33 wherein the actuator is pneumatically powered.

Claims 35-91 (Canceled).

92. (Previously Presented) The separator of claim 22 further comprising an actuator beneath the panel and configured to vertically displace the panel.

93. (Previously Presented) The separator of claim 22 further comprising a pneumatically-powered actuator beneath the panel and configured to vertically displace the panel.

Claims 94-99 (Canceled).

100. (Previously Presented) The separator of claim 22 further comprising pins extending upwardly from beneath the panel to beyond an upper surface of the panel, the pins configured to extend into the board and retain the board spaced from the panel.

101. (Previously Presented) The separator of claim 22 wherein the panel comprises aluminum.

102. (Previously Presented) The separator of claim 22 wherein the blocks are formed as one piece with the panel.

103. (Previously Presented) The separator of claim 22 wherein the blocks are formed as discrete pieces from the panel.

104. (Previously Presented) The separator of claim 22 wherein the blocks are formed as discrete pieces from the panel and are fastened to the panel.

105. (Previously Presented) The separator of claim 22 wherein the blocks extend above an uppermost surface of the panel at a height from about 0.035 inches to about 0.045 inches.

106. (Previously Presented) The separator of claim 22 wherein the blocks extend above an uppermost surface of the panel at a height from about 0.135 inches to about 0.145 inches.

107-108. (Canceled)

109. (Previously Presented) The separator of claim 22 wherein the panel is molded as part of the separator.

110. (Currently amended) An integrated circuit package separator for separating a plurality of integrated circuit packages from one another, the integrated circuit packages being provided as integrated circuit chip components joined to a board, the separating including cutting the board, the separator comprising:

a panel having an uppermost surface and molded as part of the separator;

a plurality of blocks formed as one piece with the panel and extending upward from the uppermost surface of the panel thereby creating a recessed portion ~~on~~ over the panel, the plurality of blocks configured to support the board leaving the integrated circuit chip components extending in the recessed portion between the plurality of blocks and the uppermost surface of the panel, an entirety of the recessed portion is directly over the uppermost surface of the panel; and

a cutting mechanism configured to cut the board while the board is supported on the plurality of blocks and to thereby separate the integrated circuit packages from one another.

111. (Previously Presented) The separator of claim 110 wherein the panel comprises aluminum.

112. (Previously Presented) The separator of claim 110 further comprising an actuator beneath the panel and configured to vertically displace the panel.

113. (Withdrawn) The separator of claim 31 further comprising a pair of pneumatic actuators provided beneath a support comprising the panel and comprising first and second lift members, the lift members configured to vertically lift the support having the panel off the pins by contacting the support, and wherein each actuator of the pair includes release valves configured to equilibrate a back pressure of each actuator to ambient during lifting of the support.

114. (Withdrawn) The separator of claim 34 wherein the actuator comprises a release valve configured to equilibrate a back-pressure of the actuator to ambient during lifting of a support comprising the panel.

115. (Currently amended) An integrated circuit package separator, comprising:
a panel, wherein integrated circuit packages are provided as integrated circuit chip components joined to a board;

a plurality of ribs over the panel, the plurality of ribs having curved upper surfaces and being configured to support the board while providing the integrated circuit chip components on an underside of the board in recessed slots configured to extend between upper surfaces of the plurality of ribs and an uppermost surface of the panel, wherein the plurality of the ribs comprises only two ribs over the panel;

a cutting mechanism configured to cut the board while the board is supported on a the plurality of ribs and to thereby separate the integrated circuit packages from one another; and

wherein the panel is immobile relative the plurality of the ribs, during separation of a plurality of integrated circuit packages from one another.

116. (Withdrawn) The separator of claim 115 further comprising a pair of pneumatic actuators provided beneath a support comprising the panel and comprising first and second lift members, the lift members configured to vertically lift the support having the panel off the pins by contacting the support, and wherein each actuator of the pair includes release valves configured to equilibrate a back pressure of each actuator to ambient during lifting of the support.

117. (Withdrawn) The separator of claim 115 wherein the actuator comprises a release valve configured to equilibrate a back-pressure of the actuator to ambient during lifting of a support comprising the panel.

118. (New) The separator of claim 22 further comprising a plate to support the panel, the plate comprising static-reduced plastic.

119. (New) The separator of claim 110 further comprising a plate to support the panel, the plate comprising static-reduced plastic.

120. (New) The separator of claim 115 further comprising a plate to support the panel, the plate comprising static-reduced plastic.